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IN THE UNITED STATES PATENT AND TRADEMARK
OFFICE

In re Application of

Yusuke SHIOTA et al.

Serial No. 09/147,428

Art Unit: 1724

Filed: December 22, 1998

Examiner: Cintins, I.

For: Apparatus for Treating Waste Water

DECLARATION UNDER 37. C.F.R. 1.132

HONORABLE COMMISSIONER OF PATENTS AND
TRADEMARKS

WASHINGTON, D.C. 20231

Sir:

Now comes Tohru ISHII, a citizen of Hyogo-ken, Japan, who declares and states:

That I graduated from the Chemical Engineering Department at University of Osaka Prefecture in the year 1981, and received Master's Degree in the year 1983.

That I have worked in Nippon Shokubai Co., Ltd. for 20 years in the field of Catalyst and Environmental Engineering in Research Laboratory.

That I have conducted the following experiments to clarify that the apparatus disclosed in US Patent No. 5,601,797 (hereinafter, referred to as "Gentry patent"), which uses alumina ball as a packing material, is improper as "an

apparatus for treating waste water using a wet-oxidation treatment unit".

EXPERIMENTAL REPORT

1. Experimenting Method

Experiments regarding wet-oxidation treatment were carried out in the similar manner as Examples Nos. 1, 3, and 14 recited in the present specification except that alumina ball having a diameter of 6mm (specific gravity: 3.3, void percentage: 40%) was used in place of SUS pellet (Examples Nos. 1 and 3) and SUS ball (Example No. 14).

2. Experimental Results

2-1. Experiment to Compare with Example No. 1

An experiment was made with use of a wet-oxidation treatment unit in which alumina ball was packed in the upper part and the lower part relative to the solid catalyst packed bed. This arrangement corresponds to claim 10 after amendment.

As a result of the experiment, the pressure P1 at the inlet of the reaction column at the time of initiating the wet-oxidation treatment was 72kg/cm²G, which was the same as Example No. 1 where SUS pellet was used. However, the pressure P1 upon lapse of 500 hours after initiating the treatment was 74kg/cm²G with chemical oxygen demand COD (Cr) of 1.2g/liter, pH: 5.5. As a result of the experiment, the alumina in the alumina ball dissolved, and the solid catalyst settled down in the shape of a

funnel. It was observed that the solid catalyst settled down by about 25cm in average with respect to a horizontal viewing.

2-2. Experiment to Compare with Example No. 3

An experiment was made with use of a wet-oxidation treatment unit in which alumina ball was packed in the upper part relative to the solid catalyst packed bed. This arrangement corresponds to claim 6 after amendment.

As a result of the experiment, the pressure P1 at the inlet of the reaction column at the time of initiating the wet-oxidation treatment was 71kg/cm²G, which was the same as Example No. 3 where SUS pellet was used. However, the pressure P1 upon lapse of 500 hours after initiating the treatment was 75kg/cm²G with chemical oxygen demand COD (Cr) of 0.2g/liter, pH: 5.7. As a result of the experiment, the alumina in the alumina ball dissolved, and the solid catalyst settled down in the shape of a funnel. It was observed that the solid catalyst settled down by about 15cm in average with respect to a horizontal viewing.

2-3. Experiment to Compare with Example No. 14

An experiment was made with use of a wet-oxidation treatment unit in which alumina ball was packed in the lower part relative to the solid catalyst packed bed. This arrangement corresponds to claim 15 after amendment.

As a result of the experiment, the pressure P1 at the inlet of the reaction column at the time of initiating the wet-oxidation

treatment was 9.8kg/cm²G, which was the same as Example No. 14 where SUS ball was used. However, the pressure P1 upon lapse of 500 hours after initiating the treatment was 10.1kg/cm²G with chemical oxygen demand COD (Cr) of 1.2g/liter, pH: 12.8.

Further, the alumina in the alumina ball dissolved. The solid catalyst at the lower part of the reaction column was abraded, with a small amount of powder of the solid catalyst being deposited on the solid catalyst packed bed. It was observed that there was formed a clearance of about 80mm in the lower part relative to the solid catalyst bed.

3. Consideration

As a result of the above experiments, it was verified that it is improper to use the apparatus of Gentry patent in which alumina ball was used as a packing material as an apparatus for treating waste water with use of a wet-oxidation treatment unit in all the cases of the aforementioned three experiments 2-1 through 2-3.

The undersigned Petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

7. Further declarant saith not.

Respectfully submitted,

Date: Feb 3, 2003

Tohru Ishii
Tohru ISHII